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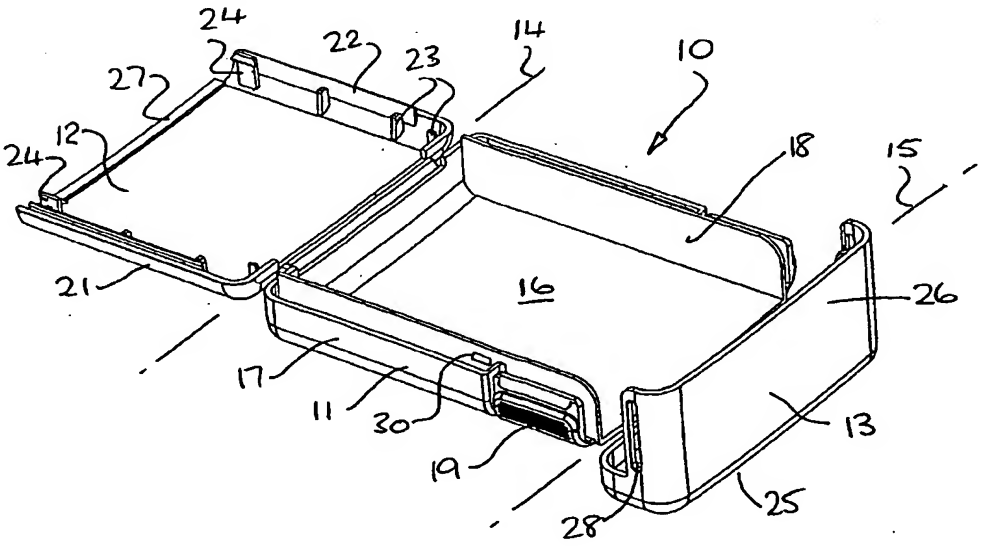
(54) Title: CONTAINER FOR BLISTER PACK



(57) Abstract: A blister pack container comprises a one piece moulding having a back (11), cover (12) and lid (13) connected by living hinges. The lid (13) is biased to the open condition and has a flap (26) to prevent blisters falling out when the lid is opened. The lid has child resistant latches (19). The container is moulded in the line of draw of the mould tool, and is adapted for an automated filling line.

WO 03/094823 A1

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Container for Blister Pack

The present invention relates to a container for blister pack and in particular, although not exclusively, to a child resistant container for blister pack.

It is known to provide boxes for pills or tablets. Such pill boxes are typically for loose pills and may contain compartments so that different pills can be separated or arranged to be taken on particular days or at particular times of the day. Pills are now often supplied in blister packs, which may have instructions on them or may have data next to each pill to indicate when each pill is to be taken. Blister packs provide an anti-tampering enclosure but are somewhat flimsy, and may be damaged if carried loose, for example in a handbag.

Furthermore, blister packs are not inherently child resistant because the pills are required to be easily removed from the blister pack.

What is required is an enclosure for protecting blister packs, and preferably a means of rendering a blister pack child resistant.

According to the invention there is provided a blister pack container, the container comprising a body which is substantially a first half shell, a cover connected to the body with a living hinge and a lid connected to the body with a living hinge such that the cover and the lid are substantially a second half shell wherein the cover is attachable to the body to form an open mouthed container and the lid is latchable to the body to close the mouth.

A container so arranged is suitable for holding blister packs of pills and any instructions or leaflets that may accompany the pills. The container also inhibits children from gaining access to the blister packs.

In a preferred embodiment the hinges are at opposite ends of the body. In a preferred embodiment, the hinges have substantially parallel axes. Preferably the hinges work in opposite directions of rotation.

Preferably the lid closes one complete end of the container. Preferably the cover is attached to the body with a semipermanent fixing. This may be achieved, for example by a one way catch.

Advantageously the cavity of the container is sized to receive a blister pack in a close fitting manner. This ensures that the blister pack does not rattle around inside the cavity. Preferably the cavity is defined at least in part by internal walls of the first half shell.

In a preferred embodiment the container is moulded from polypropylene. This material provides sufficient flexibility for the living hinges.

Preferably the cover is longer than the lid. In a preferred embodiment the cover is approximately two thirds of the length of the body and the lid closes the remaining one third of the length of the body. This arrangement ensures that the lid is an end stop for the blister pack when in the open condition, and allows easy access to the blister pack for removal from the container.

Advantageously the container is moulded in one piece in the line of draw of the mould tool. This essentially allows a two part mould tool to be used and biases the lid in the open condition due to the memory effect of the polymer. In the preferred embodiment the lid lies substantially at 90° to the body when in the open condition, in other words the lid hinge moves through around 90° from the open condition (as moulded) to the closed condition.

The relative length of the lid means that when the lid is unlatched and in its biased (open) position the blister strips do not fall out of the container but slide forward to abut against an inside surface of the lid. A blister pack container moulded in this manner is relatively inexpensive to manufacture, and is also adaptable to an automatic filling line.

In a preferred embodiment the body has one or more internal projections, typically upstanding walls. This arrangement ensures that a blister pack is contained within a cavity internally of the side walls; this reduces the risk of piercing the blister pack unintentionally when closing the container. A plurality of such projections centralise the blister back within the container, and such projections may furthermore be provided on the cover and/or on the lid.

Preferably the latch is a moulding of the body which co-operates with a catch of the lid. In the preferred embodiment the latch is child resistant, for example having latch members on opposite sides of the lid which require simultaneous squeezing to effect release of the lid.

Preferably the latch is substantially flush with the external wall of the body in the relaxed position. Advantageously the container has rounded edges and is preferably a substantially rectangular box. These features provides the necessary smooth feel to the container so that there are no sharp edges which may catch e.g. on items of clothing.

Preferably the body has two resilient latches, one on either side thereof. This provides an advantageous spacing of the latches which inhibits children from opening the container due to the dexterity and finger span required.

In a preferred embodiment the container is rectangular in cross section.

Other features of the invention will be apparent from the following description of a preferred embodiment shown by way of example only in the accompanying drawings, in which;

Figure 1 is a perspective view of a container according to the invention, in the freshly moulded open condition, and showing the interior.

Figure 2 is an enlarged end view of a latching member of the container.

Figure 3 corresponds to Fig.1 and shows the exterior.

Figure 4 shows the container from one end with cover and lid closed.

Figure 5 corresponds to Fig.3 and shows the container from the other end, and from the other side.

With reference to Figs.1-3, a one piece moulded plastics container 10 comprises a body 11, a cover 12 and a lid 13 connected together by integrally moulded living hinges at substantially parallel axes 14, 15.

The open container is illustrated in the freshly moulded condition, and it will be apparent to those skilled in the art that, apart from minor features, the lid, cover and

body are moulded in the line of draw of the mould tool, which is substantially perpendicular to the back face 16 of the body 11. Not only does this simplify manufacture, it also naturally biases the living hinges to the open condition as illustrated, and this has substantial advantages for use of the invention.

The body 11 comprises substantially a half shell comprising a rectangular back face 16 and a peripheral wall 17 extending along the base and two opposite sides thereof. The fourth side comprises part of a mouth, in use. Internal side walls 18 extend along opposite sides of the wall 17 and define the edge of an internal space adapted to contain a blister pack comprising the usual rectangular plastic laminate having a plurality of tablet containing blisters. These side walls need not be continuous provided that the blister pack is centralised in the internal space - part walls adjacent the mouth and the cover hinge are sufficient. As illustrated the side walls 18 extend upwardly above the peripheral wall 17 so as to engage within the cover 12, as will be explained.

A further function of the side walls 18 is to define the internal space whilst providing clearance for inward movement of opposite latch members 19.

A cover 12 comprises a partial half shell intended to close over the body 11 to form an open mouthed box. The cover 12 extends along about two-thirds of the length of the body 11 and has a peripheral wall 21 arranged to fit flush with the wall 17 so as to give a smooth surface when in the closed condition. The edge of the cover and body are preferably rounded, as illustrated.

The sides of the cover have upstanding location walls 22 intended to fit between the walls 17, 18 of the body. These walls 22 both close off the mating faces of the cover and body, and provide a lateral location which, in conjunction with the hinge ensures that the cover and body engage closely together. Internal projections 23, as illustrated, further stabilise the position of the cover with respect to the body.

Adjacent the mouth end, the cover has opposite upstanding catch projections 24 for engagement with corresponding projections 30 of the body which are located in the space between the walls 17, 18.

These catch projections 24, 30 provide a one-way latch for the lid so that when it is closed, there is no tendency to reopen. The catch projections 24, 30 may be replaced or supplemented by welding or adhesive.

The lid 13 comprises another partial half shell and is constituted by an end 25 for the container, and a flap 26 which closes over a lip 27 of the cover. The flap 26 ensures that when the lid is open, there is no tendency for a blister pack to slide out of the container. The flap 26 provides an abutment so that the blister pack can slide outwardly to a position where it can be removed by grasping via the partially open top face, which is otherwise closed by the flap 26.

The lid includes opposite apertures 28 for engagement by latch members 19 which extend outwardly and upwardly from back of the body, and are resiliently squeezable towards each other.

Figure 2 illustrates the latch member 19, and shows the back face 16, side walls 18, a squeezable portion 29 (which is preferably ribbed), and a latch projection 30. Inward movement to the released condition is indicated by arrow 31.

The underside of the freshly moulded container is illustrated in Figure 3. This view shows the rounded nature of the external surfaces, and apertures 33 which are required to define the internal projections required for engagement with the catch projections 24 of the cover. These apertures are not fundamental to the invention, but are required because of the method of cover retention provided in this preferred embodiment.

Figures 4 and 5 show the closed container, the hinge being defined by a single bending axis 15 of the lid and a double axis 14a, 14b of the cover.

In use the generally flat planar nature of the freshly moulded container is very suitable for an automatic filling line, whereby the blister pack is placed on the back face 16, and the cover is folded over and automatically retained by the catch projections 24, 30. The lid is then closed automatically and retained by the latch members 19. There is no requirement for the cover to be re-opened, and thus the cover can be adapted for permanent or semi-permanent fixing on first closure.

Squeezing of the opposite latch members 19 requires a degree of manual dexterity which provides child resistance, yet is generally no obstacle to an adult.

Other forms of child resistant latch are adaptable to the container of the present invention.

Claims

1. A blister pack container, the container comprising a body which is substantially a first half shell, a cover connected to the body with a living hinge and a lid connected to the body with a living hinge such that the cover and the lid are substantially a second half shell wherein the cover is attachable to the body to form an open mouthed container and the lid is latchable to the body to close the mouth.

2. A container according to claim 1 wherein said hinges are at opposite ends of the body and have substantially parallel axes.

3. A container according to claim 1 or claim 2 and defining an internal cavity defined at least in part by internal walls of said first half shell.

4. A container according to any preceding claim wherein said cover is mechanically latchable to said body by means located to the exterior of said internal walls.

5. A container according to any preceding claim wherein the cover is longer than the lid.

6. A container according to any preceding claim wherein said lid is biased to the open condition.

7. A container according to any preceding claim wherein said lid comprises an end cover and a flap upstanding therefrom such that in the open condition said flap prevents a blister pack sliding out of said mouth.

8. A container according to claim 7 wherein said flap is adapted to close a portion of said mouth.

9. A container according to any preceding claim wherein said lid is latchable to said body by resiliently deformable latch members, the latch members being connected to said body and being squeezable together to the released condition.

10. A container according to claim 9 wherein in the relaxed condition said latch members are substantially flush with the exterior surface of said container.

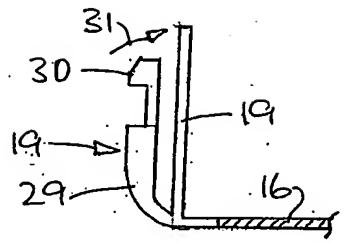

Fig2

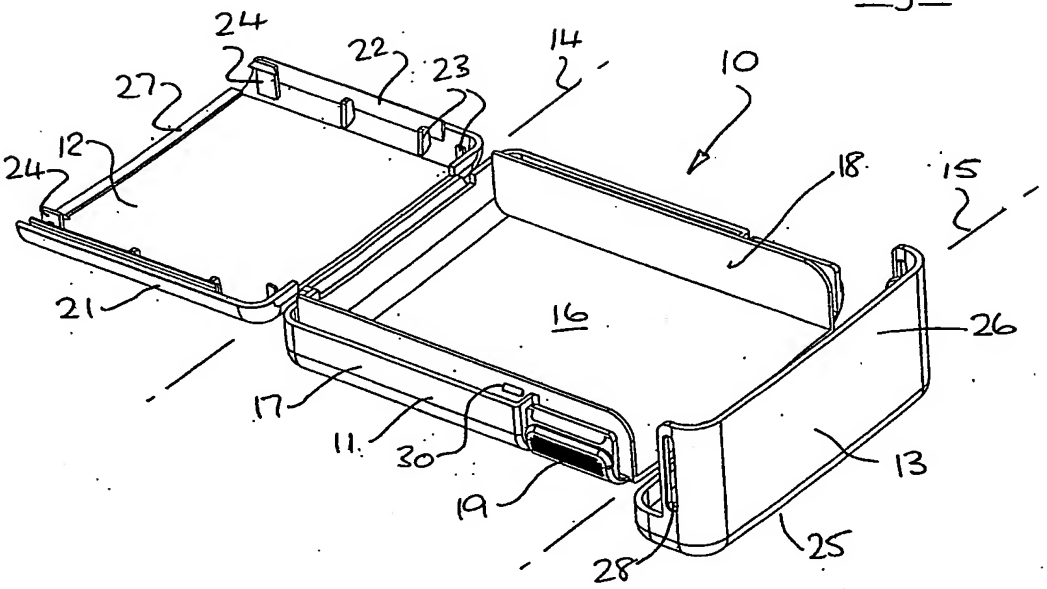

Fig1

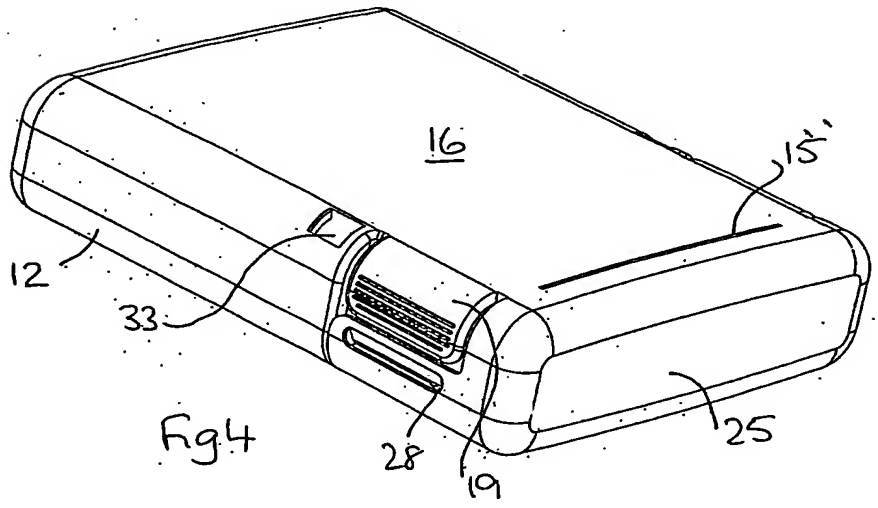

Fig4

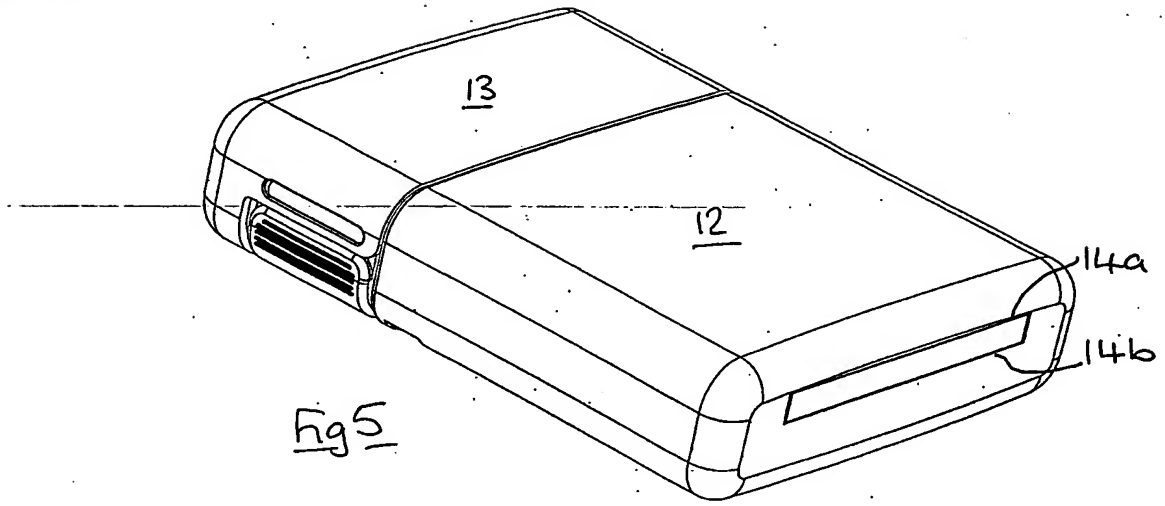

Fig 5

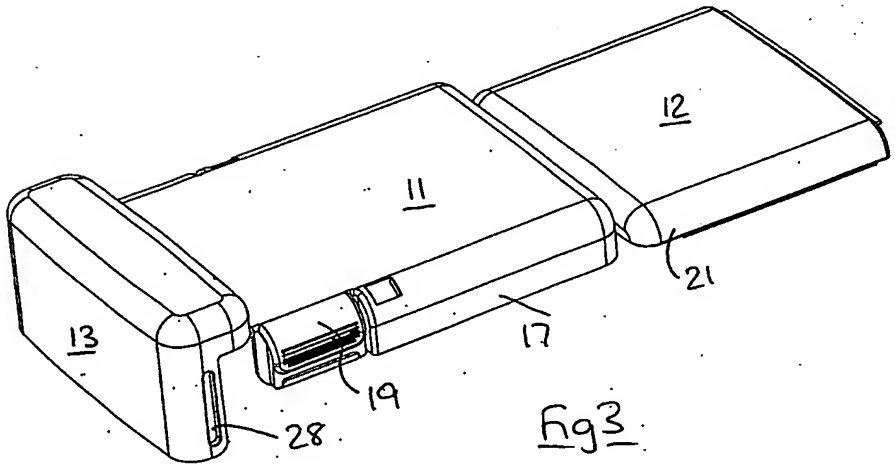

Fig 3

INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61J1/03 B65D50/04 B65D43/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61J B65D G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	US 5 435 449 A (GELARDI JOHN A) 25 July 1995 (1995-07-25) abstract; figure 5	1
A	US 4 759 443 A (EGLY ROBERT A) 26 July 1988 (1988-07-26) abstract; figures 3,7	1
A	EP 0 391 458 A (NORWICH EATON PHARMA) 10 October 1990 (1990-10-10) abstract; figure 3	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
2 September 2003	30/09/2003

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016	Storer, J

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
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